

36 (New). A composite material comprising graphite fibers dispersed in a matrix material comprising by volume at least 50 percent elemental silicon, said graphite fibers possessing a negative CTE at least in the axial direction.

37 (New). The composite material of claim 36, produced by a process comprising:

- (a) coating silicon carbide onto said graphite fibers;
- (b) collecting said fibers as a porous preform;
- (c) introducing a carbonaceous resin to said preform;
- (d) pyrolyzing said resin, thereby adding about 1-10 percent by weight of carbon to said preform;
- (e) contacting a source of silicon or silicon alloy in molten form to said carbon-containing preform;
- (f) infiltrating said molten silicon or silicon alloy into said carbon-containing preform, thereby forming said matrix material; and
- (g) solidifying said silicon or silicon alloy.

38 (New). The composite material of claim 36, further comprising silicon carbide.

39 (New). The composite material of claim 38, wherein at least some of said silicon carbide is provided on said graphite fibers as a protective coating intended to prevent direct contact of said graphite fibers with said silicon during processing.

40 (New). The composite material of claim 36, wherein said fibers are provided as at least one substantially flat ply, and a coefficient of thermal expansion of said composite is quasi-isotropic within the plane of said ply.

31/41 (New). The composite material of claim 36, wherein said fibers are provided in the form of a plurality of stacked plies, and further wherein said fibers are substantially unidirectional within a ply, and further wherein said plies are oriented with respect to one another as to produce a quasi-isotropic coefficient of thermal expansion within the plane of said stacked plies.

31/42 (New). The composite material of claim 41, wherein said quasi-isotropic condition is achieved by orienting said plies at angles of +45 degrees, -45 degrees and 90 degrees with respect to a reference ply.

31/43 (New). The composite material of claim 41, wherein said quasi-isotropic condition is achieved by orienting said plies at angles of +60 degrees and -60 degrees with respect to a reference ply.

31/44 (New). The composite material of claim 36, comprising at least about 30 percent by volume of said fibers.

31/45 (New). The metal matrix composite material of claim 36, further comprising a coefficient of thermal expansion no greater than about 4 ppm/K.

31/46 (New). The metal matrix composite material of claim 41, wherein an overall CTE of said composite in a quasi-isotropic direction is no greater than about 3 ppm/K.

REMARKS

Claims 21-49 are pending. Applicants have cancelled claims 5a, 6 and 11a without prejudice or disclaimer. Claims 33-46 have been added.

Cancelled claims 5a, 6 and 11a effectively have been re-numbered as new claims 33-35.